

**CONDUCTIVITY****SM 2510B-1997 (2011)**

*ADDITIONAL QC REQUIREMENTS FOR THIS METHOD: Certified or Accredited laboratories using this method are assessed to applicable requirements of SM 1020 and SM 2020.*

Facility Name: \_\_\_\_\_ VELAP ID: \_\_\_\_\_

Assessor Name: \_\_\_\_\_ Analyst Name: \_\_\_\_\_ Inspection Date: \_\_\_\_\_

Records Examined: SOP Number/ Revision/ Date: \_\_\_\_\_ Analyst: \_\_\_\_\_

Sample ID: \_\_\_\_\_ Date of Sample Preparation: \_\_\_\_\_ Date of Analysis: \_\_\_\_\_

Relevant Aspect of Standards	Method Reference	Y	N	N/A	Comments
1. Is the conductivity instrument capable of measuring with an error not exceeding 1% or 1 $\mu\text{mho}/\text{cm}$ , whichever is greater?	2510B 2.a				
2. Can the thermometer be read to the nearest 0.1° C over the range of 23 to 27° C?	2510B 2.b				
3. For platinum-type electrodes, are new cells—that are <b>not already coated and ready for use</b> —cleaned with chromic-sulfuric acid cleaning mixture and platinized before use or whenever readings become erratic?	2510B 2.c.1				
4. For platinum-type electrodes, is the electrode immersed in distilled water when not in use?	2510B 2.c.1				
5. Is 0.0100M potassium chloride used as a reference standard, with a known conductivity of 1412 $\mu\text{mhos}/\text{cm}$ at 25°C?	2510B 3.b				<i>For cell constants not between 1 and 2 <math>\text{cm}^{-1}</math>, other KCl solutions may be used, as listed in Table 2510:I.</i>
6. Is the cell constant determined, using 0.0100 M KCl measured at 25.0 $\pm$ 0.1° C, as specified in the method?	2510B 4.a				
7. If the cell constant has not been determined as described above, was the meter adjusted to read 1412 $\mu\text{mhos}/\text{cm}$ (or other designated value) when using a known reference standard measured at 25.0 $\pm$ 0.1° C?	2510B 4.a				

Notes/Comments

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Relevant Aspect of Standards	Method Reference	Y	N	N/A	Comments
8. Is sample temperature adjusted to about 25°C prior to measurement?	2510B 4.b				
9. Is the cell rinsed with one or more portions of sample before measuring resistance or conductivity?	2510B 4.b				
10. Is the temperature of the sample recorded to ± 0.1°C along with resistance or conductivity measurement?	2510B 4.b				
11. If resistance is measured, is conductivity at 25°C calculated by the following formula?  $k = \frac{(1,000,000)(C)}{R_m[1 + 0.019(t - 25)]}$ Where k = conductivity, µmhos/cm C = cell constant, cm <sup>-1</sup> R <sub>m</sub> = measured resistance of sample, ohms t = temperature of measurement	2510B 5.a				
12. If conductivity is measured without internal temperature compensation, is conductivity at 25°C calculated by the following formula?  $k = \frac{k_m}{1 + 0.019(t - 25)}$ where k <sub>m</sub> = measured conductivity in units of µmhos/cm at t° C, and other units are defined as above	2510B 5.b				
13. If conductivity is measured with automatic internal temperature compensation, are readouts directly reported with the appropriate units?	2510B 5.b				

Notes/Comments